

**Call for FY 2004
Common High Performance Computing Software Support Initiative (CHSSI)
Portfolio Project Proposals**

**Frequently Asked Questions
and
Sample Documentation and Reporting Requirements**

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Frequently Asked Questions

Q I don't have a project that fits into any of the advertised portfolios. Can I submit a proposal for my project anyway?

A No. Only projects directly related to the portfolios advertised in this call will be considered.

Q What is the duration of a CHSSI project?

A The duration of a CHSSI project is three years. We expect that a deliverable will be "fielded" in three years.

Q Are resumes and references included in the 20 page limit.

A No. See paragraph 4b of the selection plan.

Q Do you require signatures from my management with my proposal?

A No. The High Performance Computing Modernization Program Office (HPCMPO) requires a memorandum of commitment from your management only after proposals have been selected. See paragraph 6 of the selection plan.

Q Will CHSSI fund the development of software for Linux clusters?

A High Performance Computing Modernization Program (HPCMP) systems used for CHSSI-developed software include Linux clusters. Proposals may be submitted for software development efforts that will use an HPCMP Linux system. Please note that software developed under CHSSI must be ported to at least two high performance computing platforms at HPCMP shared resource centers. For HPCMP-managed hardware at our major shared resource centers (MSRCs), go to <https://xwww.asc.hpc.mil/cgi-bin/hwbycntr.pl>.

Q We are a little concerned about the overhead and oversight that our organization might be required to supply. Like many, we are rather tight for manpower. In reading the "FY 2004 CHSSI Project Selection Plan", I see that there are requirements for reporting to the HPCMPO. How stringent are these requirements?

A The reporting requirements are very important and must be stringently adhered to. The HPCMPO will freeze or terminate funding for any project that has not complied with documentation, oversight, and/or reporting requirements. The requirements are only those necessary for good project management and essential project oversight by the HPCMPO. All of the key project management and test plans (e.g., the *Software Development Plan* and the *Test and Evaluation Master Plan Addendum*) have boilerplates for simplicity of incorporating required text. However, the content is important and information is reviewed and approved prior to the start of a project. Additional reporting requirements are monthly

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financial and quarterly technical and management reports, which also have boilerplate formats.

Please note that you should budget for overhead and oversight in your proposal's funding tables.

Q What we propose may involve taking Commercial-off-the-Shelf (COTS) software and modifying it. Of course, this would involve cooperation and involvement of the contractor who makes the software. But how feasible is this, and will the end product have to be releasable to all? Would this be as tricky as I think it might be?

A The use of COTS software may be included in a proposal. However there are many problems dealing with COTS that must be resolved before the proposal is submitted. Work with knowledgeable acquisition personnel to ameliorate known problems involved in COTS modification. Known problems lie in the intellectual property rights of the code in question, and the export control issues associated, as well as distribution rights to the software. There are also problems of invalidating warranties by using COTS and the problem of compatibility of the modifications to future versions of COTS. All of these issues will require much work to mitigate the risks associated with a COTS-related proposal. Ensure that: procedures are incorporated into the contract that require the contractor to review all subcontractor or vendor COTS products; all commercial hardware and software in the system are supportable; license fees and other support and maintenance costs are disclosed; responsibilities are defined for maintaining system compatibility. Data rights may be

a concern if a contractor has developed intellectual property independent of the contract. You should ensure you have identified and priced all restricted rights for the software and documentation being modified. In addition, you must ensure compliance with current DoD data standardization policies, including the use of standard data. Specifically, DoD policies require compliance with DoDD 8320.1. Also see <http://www.acq.osd.mil/ar/doc/intelprop.pdf>, which provides an overview of the current DoD policy concerning intellectual property rights.

Q Can private corporations or academic institutions submit CHSSI proposals?

A No. Proposals must be submitted by DoD government employees (civilian or military). Please see paragraph 3a, *DoD Project Leader*, of the selection plan.

Q Do CHSSI funds only pay for contractors, or can they be used to pay the salary of project team members?

A CHSSI funds can be used to pay for labor and travel of DoD personnel and be placed on contract(s) for personnel to perform the software parallelization.

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Q On page 6 of the CHSSI project selection plan, under deliverables, is the requirement:

“Identify at least three DoD HPCMP scalable architectures that will be used to develop scalable implementations of the proposed software. In addition, identify the DoD scalable high performance computing platforms to be used for demonstration and production computations.”

I get "computing platforms", but I'm a little unsure about what you want for "scalable architectures". Shared memory versus distributed memory? The dimensionality of the connections between the nodes? If we write everything to use MPI, does that count as one architecture?

A *Architecture*, in this context is the computer design; the way components fit together. The term is used particularly of processors, both individual and in general; but also applies to other key components which differentiate the supercomputers extant. For HPCMP-managed hardware at our major shared resource centers, go to <https://xwww.asc.hpc.mil/cgi-bin/hwbycntr.pl>. The divergence of architectures is very apparent on the MSRC hardware page because it lists the operating systems, types of processors, and memory types.

Platform refers to specific computer hardware - one row of the MSRC table would be a platform.

The goal of *Message Passing Interface* (MPI), according to the MPI Forum, is to develop a widely used standard for writing message-passing programs. The interface attempts to establish a practical, portable, efficient, and flexible standard for message passing. You can use the MPI standard and still write to several architectures since architectures are differentiated by other traits in addition to memory management.

Q: The call for proposal for Collaborative Simulation and Testing states that interfaces must be included in each proposal. From where can I get the requirements for the interface?

A: Please contact the portfolio leader, Dr. David Findlay (FindlayDB@navair.navy.mil), for the interface requirements document.

Q: There is not a lot of information included in the call for the portfolio titled Virtual Electromagnetics Design. Is there additional information anywhere?

A: Please contact Dr. Kueichien Hill (Kueichien.Hill@wpafb.af.mil) for additional details.

Q: I notice that the FY 2004 Call for Portfolio Project Proposals has a reference to “software protection”. What is this? Where can I get more information?

A: Software Protection Initiative (SPI) is a program with an overall objective to identify, study, and evaluate the key technologies needed to strengthen current software protection capabilities for scientific, engineering, modeling, simulation, and operational software that executes on special-purpose and general-purpose computers. You may contact Major John MacNicol (John.MacNicol@wpafb.af.mil) for additional information.

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The following documents are required to be submitted **after** the proposal is selected:

1. **Memorandum of Endorsement:** A memorandum of endorsement from your laboratory or test center director will be the first post-selection requirement - due within 30 days of selection. A sample memorandum is at the last page of the *FY 2004 Common High Performance Computing Software Support Initiative (CHSSI) Portfolio Project Selection Plan*.
2. **Test and Evaluation Master Plan Addendum:** This document outlines the key measures and methods for testing the software. Project leaders will input their own project's test and evaluation planning information to the portfolio leader who will prepare the portfolio-level TEMP. The addendum outline sample is shown below.

PART ONE -- SYSTEM INTRODUCTION

- 1.0 GENERAL
- 1.1 MISSION DESCRIPTION
- 1.2 SYSTEM THREAT ASSESSMENT
- 1.3 MEASURES OF EFFECTIVENESS AND SUITABILITY
- 1.4 SYSTEM DESCRIPTION
- 1.5 CRITICAL TECHNICAL PARAMETERS

PART TWO - INTEGRATED TEST PROGRAM SUMMARY

- 2.1 INTEGRATED TEST PROGRAM SCHEDULE
- 2.2 MANAGEMENT
 - 2.2.1 RESPONSIBILITIES
 - 2.2.1.1 PORTFOLIO LEADER'S RESPONSIBILITIES
 - 2.2.1.2 PROJECT LEADER'S RESPONSIBILITIES
 - 2.2.2 TESTING CONSIDERATIONS
 - 2.2.3 SECURITY

PART THREE - DEVELOPMENTAL TEST AND EVALUATION OUTLINE

- 3.1 DEVELOPMENTAL TEST AND EVALUATION OVERVIEW
- 3.2 DEVELOPMENTAL TEST AND EVALUATION TO DATE
- 3.3 FUTURE DEVELOPMENTAL TEST AND EVALUATION
 - 3.3.1. CERTIFICATION FOR IOC
 - 3.3.2. LIMITATIONS

PART FOUR - OPERATIONAL TEST AND EVALUATION OUTLINE

- 4.1 OPERATIONAL TEST AND EVALUATION OVERVIEW
 - 4.1.1 OPERATIONAL ASSESSMENT
 - 4.1.2 INITIAL OPERATING CAPABILITY TESTING
 - 4.1.3 FOLLOW-ON OPERATIONAL TEST AND EVALUATION
- 4.2 CRITICAL OPERATIONAL ISSUES
- 4.3 OPERATIONAL TEST AND EVALUATION TO DATE
- 4.4 FUTURE TEST AND EVALUATION
 - 4.4.1 CONFIGURATION DESCRIPTION
 - 4.4.2 OPERATIONAL TEST AND EVALUATION OBJECTIVES
 - 4.4.3 OT&E EVENTS, SCOPE OF TESTING AND SCENARIOS
 - 4.4.4 LIMITATIONS

PART FIVE - TEST AND EVALUATION RESOURCE SUMMARY

- 5.1 PROJECT TEST RESOURCES

ANNEXES

- ANNEX A -- BIBLIOGRAPHY
- ANNEX B - ACRONYMS
- ANNEX C - POINTS OF CONTACT

RECORD OF CHANGES

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3. Software Development Plan: This plan extensively documents the management and development processes for the project. A sample of the plan's outline is show below.

1		SCOPE
1.1		IDENTIFICATION
1.1.1		Portfolio
1.1.2		Project Identifier and Name
1.1.3		Software Version and Release Information
1.2		SYSTEM OVERVIEW
1.2.1		Project Overview
1.2.1.1		Project Starting Point.
1.2.1.2		System Description.
1.2.1.3		Languages Used
1.2.1.4		Parallelism Method(s) Used
1.2.1.5		Sites and Platforms Planned for Developmental Use
1.3		DOCUMENT OVERVIEW
1.4		RELATIONSHIP TO OTHER PLANS
2		REFERENCED DOCUMENTS
2.1		GOVERNMENT DOCUMENTS
2.1.1		Standards
2.1.2		Other Publications
2.2		NON-GOVERNMENT DOCUMENTS
2.2.1		Non-Government Standards
2.2.2		Non-Government Publications
3		OVERVIEW OF REQUIRED WORK
3.1		REQUIREMENTS AND CONSTRAINTS ON SOFTWARE
3.2		SOFTWARE DEVELOPMENT STRATEGY
3.3		REQUIREMENTS AND CONSTRAINTS ON THE PROJECTED SCHEDULES AND RESOURCES
3.4		OTHER REQUIREMENTS AND CONSTRAINTS
3.4.1		Project Security
3.4.2		Privacy
3.4.3		Methods, Standards and Interdependencies in Hardware and Software Development
3.4.4		Software Release Limitations
3.4.4.1		Distribution Statement
3.4.4.2		Export Control Issues
3.4.4.3		Intellectual Property Rights
3.4.4.4		Release Procedures
4		SOFTWARE DEVELOPMENT ACTIVITIES
4.6		WORK BREAKDOWN STRUCTURE
4.7		CORRECTIVE ACTION
4.7.1		Problem/Change Reports
4.7.2		Corrective Action System
5		SOFTWARE TESTING ACTIVITIES
5.1		DEVELOPMENTAL TEST AND EVALUATION OVERVIEW
5.1.1		Developmental Test and Evaluation to Date
5.1.1.1		SAT
5.1.1.2		Alpha
5.1.1.3		Beta
5.1.2		Future Developmental Test and Evaluation
5.1.2.1		SAT
5.1.2.2		Alpha
5.1.2.3		Beta
5.2		OPERATIONAL TEST AND EVALUATION
5.2.1		Operational Test Readiness Review
5.2.1.1		OTRR Objectives
5.2.1.2		Hardware and Software Configuration Descriptions
5.2.1.3		OTRR Events and Scope of Testing
6		SOFTWARE TRANSITION AND INSTALLATION
6.1		SOFTWARE TRANSITION
6.2		SOFTWARE INSTALLATION
6.2.1		Preparing for Software Distribution
6.2.1.1		Preparing Source Files
6.2.1.2		Preparing Executable Files
6.2.1.3		Preparing User Manuals
6.2.2		Software Updates
7		MANAGEMENT
7.1		PROJECT PLANNING AND OVERSIGHT
7.1.1		Spend Plan
7.1.2		Technical Reviews
7.1.3		Management Reviews
7.1.3.1		Subcontractor Management.

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7.3	COMPUTER HARDWARE RESOURCE UTILIZATION
7.4	ACCESS FOR ACQUIRER REVIEW
7.5	RISK MANAGEMENT, INCLUDING KNOWN RISKS AND CORRESPONDING STRATEGIES
8	PROJECT ORGANIZATION AND RESOURCES
8.1	PROJECT ORGANIZATION
8.1.1	Principal Investigator
8.1.2	Other Investigators
8.1.2.1	DoD Investigators and Qualifications
8.1.2.2	Other Government Investigators and Qualifications
8.1.2.3	Academic & Industry Investigators and Qualifications
8.2	PROJECT RESOURCES
9	NOTES
9.1	DEFINITIONS
9.2	ACRONYMS

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4. Quarterly Report: These reports are synopses of key activities programmed and accomplished during the preceding fiscal quarter. They provide HPCMP management with a snapshot of the project's progress. Quarterly reports are due the 15th of the month following each federal fiscal quarter. That is, January 15th for 1st quarter reports covering October, November and December; April 15th for 2nd quarter reports covering January, February and March, and so on. Here is a picture of the current format for project quarterly reports.

<p style="text-align: center;">CHSSI Project <i><project number></i> <i><project title></i></p> <p style="text-align: center;">Quarterly Report for <i><quarter and FY being reported></i></p> <p style="text-align: center;">Principal Investigator: <i><name></i> <i><mail address></i> <i><email address></i> <i><phone number></i> <i><fax number></i></p> <p>I. PROJECT INFORMATION: (Note: if the project is developing multiple codes, show the schedule for each one.)</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;"></td> <td style="width: 35%; text-align: center;">Original Approved</td> <td style="width: 35%; text-align: center;">Revised</td> </tr> <tr> <td>Project Start Date:</td> <td style="text-align: center;"><i>X</i> Quarter FY <i>XX</i></td> <td style="text-align: center;"><i>X</i> Quarter FY <i>XX</i></td> </tr> <tr> <td>SAT Review Date:</td> <td style="text-align: center;"><i>X</i> Quarter FY <i>XX</i></td> <td style="text-align: center;"><i>X</i> Quarter FY <i>XX</i></td> </tr> <tr> <td>Alpha Review Date:</td> <td style="text-align: center;"><i>X</i> Quarter FY <i>XX</i></td> <td style="text-align: center;"><i>X</i> Quarter FY <i>XX</i></td> </tr> <tr> <td>Beta Review Date:</td> <td style="text-align: center;"><i>X</i> Quarter FY <i>XX</i></td> <td style="text-align: center;"><i>X</i> Quarter FY <i>XX</i></td> </tr> <tr> <td>IOC Review Date:</td> <td style="text-align: center;"><i>X</i> Quarter FY <i>XX</i></td> <td style="text-align: center;"><i>X</i> Quarter FY <i>XX</i></td> </tr> </table> <p>Schedule Slippage/Advancement: <i><If the test schedule has slipped or advanced, explain why, in one or two paragraphs. ></i></p> <p>II. PROJECT ASSESSMENTS</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 15%;">Technical:</td> <td style="width: 15%; text-align: center;"><i><red/yellow/green></i></td> <td style="width: 70%; text-align: center;"><i><comments explaining status></i></td> </tr> <tr> <td>Cost:</td> <td style="text-align: center;"><i><red/yellow/green></i></td> <td style="text-align: center;"><i><comments explaining status></i></td> </tr> <tr> <td>Schedule:</td> <td style="text-align: center;"><i><red/yellow/green></i></td> <td style="text-align: center;"><i><comments explaining status></i></td> </tr> <tr> <td>Test and Evaluation:</td> <td style="text-align: center;"><i><red/yellow/green></i></td> <td style="text-align: center;"><i><comments explaining status></i></td> </tr> </table> <p>Note:</p> <ul style="list-style-type: none"> "green" means that all is well and the project is proceeding as planned "yellow" means the project has hit (or is about to hit) a snag — some aspect of the project is <u>not</u> proceeding according to plan. Explain what has happened and what remedial action is being taken. "red" means the project has run into serious difficulty. Explain what has happened and what remedial action is being taken. 		Original Approved	Revised	Project Start Date:	<i>X</i> Quarter FY <i>XX</i>	<i>X</i> Quarter FY <i>XX</i>	SAT Review Date:	<i>X</i> Quarter FY <i>XX</i>	<i>X</i> Quarter FY <i>XX</i>	Alpha Review Date:	<i>X</i> Quarter FY <i>XX</i>	<i>X</i> Quarter FY <i>XX</i>	Beta Review Date:	<i>X</i> Quarter FY <i>XX</i>	<i>X</i> Quarter FY <i>XX</i>	IOC Review Date:	<i>X</i> Quarter FY <i>XX</i>	<i>X</i> Quarter FY <i>XX</i>	Technical:	<i><red/yellow/green></i>	<i><comments explaining status></i>	Cost:	<i><red/yellow/green></i>	<i><comments explaining status></i>	Schedule:	<i><red/yellow/green></i>	<i><comments explaining status></i>	Test and Evaluation:	<i><red/yellow/green></i>	<i><comments explaining status></i>	<p>III. OTHER COMMENTS</p> <ol style="list-style-type: none"> <i><if applicable, explain why goals have not been completed as planned></i> <i><if applicable, explain any changes to testing/release schedule></i> <i><give any information pertinent to the project that has not been mentioned elsewhere and list the activities each team member has undertaken during the quarter></i> <p>IV. SIGNIFICANT DEVELOPMENTS</p> <p>Goals for Previous Quarter:</p> <ol style="list-style-type: none"> <i><This is a list of the goals you set for your project last quarter to be completed during this quarter. These goals should correlate to the Work Breakdown Structure of the Software Development Plan.></i> <p>Goals Completed:</p> <ol style="list-style-type: none"> <i><This lists the goals completed during this quarter. These directly refer to the goals listed above. Goals which have not been attained must be explained in Section III.></i> <p>Goals for Next Quarter:</p> <ol style="list-style-type: none"> <i><This is a list of the goals you plan on tackling during the next quarter. These goals should correlate to the Work Breakdown Structure of the Software Development Plan.></i>
	Original Approved	Revised																													
Project Start Date:	<i>X</i> Quarter FY <i>XX</i>	<i>X</i> Quarter FY <i>XX</i>																													
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Test and Evaluation:	<i><red/yellow/green></i>	<i><comments explaining status></i>																													

5. Financial Management Report: This simple spreadsheet is due each month and provides a synopsis of obligations and expenditures –cumulatively, including those incurred the preceding month. The financial management reports are due from the portfolio leaders on the 15th of every month. The portfolio leaders will provide instructions to project leaders.

Definitions

Obligations. An obligation occurs when an obligating official (like a contracting officer) makes an award (like a contract) to an entity (person, firm, university) on behalf of a DoD organization, thereby obligating that organization to fund the work done in compliance with the awarding document.

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Expenditures. Depending on your point of view....Expenditures are actual payments TO the contracted entity AND they are disbursements of funds FROM the DoD agency.

6. Testing Program: Throughout the progression of the software development effort, the software will be required to undergo a series of tests. Each project will undergo a software acceptance test, alpha test, beta test, and initial operational capability test. Test plans/scenarios and test reports will be required for each test. Guidance and templates will be provided to the project leaders by the HPCMPO.

